

## Federal Aviation Administration, DOT

## § 23.1195

(6) Titanium sheet, 0.016 inch thick.

[Doc. No. 4080, 29 FR 17955, Dec. 18, 1964, as amended by Amdt. 23-43, 58 FR 18975, Apr. 9, 1993; 58 FR 27060, May 6, 1993; Amdt. 23-51, 61 FR 5138, Feb. 9, 1996]

### § 23.1192 Engine accessory compartment diaphragm.

For aircooled radial engines, the engine power section and all portions of the exhaust system must be isolated from the engine accessory compartment by a diaphragm that meets the firewall requirements of § 23.1191.

[Amdt. 23-14, 38 FR 31823, Nov. 19, 1973]

### § 23.1193 Cowling and nacelle.

(a) Each cowling must be constructed and supported so that it can resist any vibration, inertia, and air loads to which it may be subjected in operation.

(b) There must be means for rapid and complete drainage of each part of the cowling in the normal ground and flight attitudes. Drain operation may be shown by test, analysis, or both, to ensure that under normal aerodynamic pressure distribution expected in service each drain will operate as designed. No drain may discharge where it will cause a fire hazard.

(c) Cowling must be at least fire resistant.

(d) Each part behind an opening in the engine compartment cowling must be at least fire resistant for a distance of at least 24 inches aft of the opening.

(e) Each part of the cowling subjected to high temperatures due to its nearness to exhaust system ports or exhaust gas impingement, must be fire proof.

(f) Each nacelle of a multiengine airplane with supercharged engines must be designed and constructed so that with the landing gear retracted, a fire in the engine compartment will not burn through a cowling or nacelle and enter a nacelle area other than the engine compartment.

(g) In addition, for commuter category airplanes, the airplane must be designed so that no fire originating in any engine compartment can enter, either through openings or by burn-

through, any other region where it would create additional hazards.

[Doc. No. 4080, 29 FR 17955, Dec. 18, 1964; 30 FR 258, Jan. 9, 1965, as amended by Amdt. 23-18, 42 FR 15042, Mar. 17, 1977; Amdt. 23-34, 52 FR 1833, Jan. 15, 1987; 58 FR 18975, Apr. 9, 1993]

EFFECTIVE DATE NOTE: By Amdt. 23-62, 76 FR 75759, Dec. 2, 2011, § 23.1193 was amended by revising paragraph (g), effective Jan. 31, 2012. For the convenience of the user, the revised text is set forth as follows:

### § 23.1193 Cowling and nacelle.

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(g) In addition, for all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage, the airplane must be designed so that no fire originating in any engine compartment can enter, either through openings or by burn-through, any other region where it would create additional hazards.

### § 23.1195 Fire extinguishing systems.

(a) For commuter category airplanes, fire extinguishing systems must be installed and compliance shown with the following:

(1) Except for combustor, turbine, and tailpipe sections of turbine-engine installations that contain lines or components carrying flammable fluids or gases for which a fire originating in these sections is shown to be controllable, a fire extinguisher system must serve each engine compartment;

(2) The fire extinguishing system, the quantity of the extinguishing agent, the rate of discharge, and the discharge distribution must be adequate to extinguish fires. An individual "one shot" system may be used.

(3) The fire extinguishing system for a nacelle must be able to simultaneously protect each compartment of the nacelle for which protection is provided.

(b) If an auxiliary power unit is installed in any airplane certificated to this part, that auxiliary power unit compartment must be served by a fire extinguishing system meeting the requirements of paragraph (a)(2) of this section.

[Amdt. 23-34, 52 FR 1833, Jan. 15, 1987, as amended by Amdt. 23-43, 58 FR 18975, Apr. 9, 1993]

## § 23.1197

EFFECTIVE DATE NOTE: By Amdt. 23-62, 76 FR 75759, Dec. 2, 2011, § 23.1195 was amended by revising the introductory text of paragraph (a) and by revising paragraph (a)(2), effective Jan. 31, 2012. For the convenience of the user, the revised text is set forth as follows:

### § 23.1195 Fire extinguishing systems.

(a) For all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage, fire extinguishing systems must be installed and compliance shown with the following:

\* \* \* \* \*

(2) The fire extinguishing system, the quantity of the extinguishing agent, the rate of discharge, and the discharge distribution must be adequate to extinguish fires. An individual “one shot” system may be used, except for engine(s) embedded in the fuselage, where a “two shot” system is required.

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### § 23.1197 Fire extinguishing agents.

For commuter category airplanes, the following applies:

(a) Fire extinguishing agents must—  
(1) Be capable of extinguishing flames emanating from any burning of fluids or other combustible materials in the area protected by the fire extinguishing system; and

(2) Have thermal stability over the temperature range likely to be experienced in the compartment in which they are stored.

(b) If any toxic extinguishing agent is used, provisions must be made to prevent harmful concentrations of fluid or fluid vapors (from leakage during normal operation of the airplane or as a result of discharging the fire extinguisher on the ground or in flight) from entering any personnel compartment, even though a defect may exist in the extinguishing system. This must be shown by test except for built-in carbon dioxide fuselage compartment fire extinguishing systems for which—

(1) Five pounds or less of carbon dioxide will be discharged, under established fire control procedures, into any fuselage compartment; or

(2) Protective breathing equipment is available for each flight crewmember on flight deck duty.

[Amdt. 23-34, 52 FR 1833, Jan. 15, 1987]

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EFFECTIVE DATE NOTE: By Amdt. 23-62, 76 FR 75760, Dec. 2, 2011, § 23.1197 was amended by revising the introductory text, effective Jan. 31, 2012. For the convenience of the user, the revised text is set forth as follows:

### § 23.1197 Fire extinguishing agents.

For all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage the following applies:

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### § 23.1199 Extinguishing agent containers.

For commuter category airplanes, the following applies:

(a) Each extinguishing agent container must have a pressure relief to prevent bursting of the container by excessive internal pressures.

(b) The discharge end of each discharge line from a pressure relief connection must be located so that discharge of the fire extinguishing agent would not damage the airplane. The line must also be located or protected to prevent clogging caused by ice or other foreign matter.

(c) A means must be provided for each fire extinguishing agent container to indicate that the container has discharged or that the charging pressure is below the established minimum necessary for proper functioning.

(d) The temperature of each container must be maintained, under intended operating conditions, to prevent the pressure in the container from—

(1) Falling below that necessary to provide an adequate rate of discharge; or

(2) Rising high enough to cause premature discharge.

(e) If a pyrotechnic capsule is used to discharge the extinguishing agent, each container must be installed so that temperature conditions will not cause hazardous deterioration of the pyrotechnic capsule.

[Amdt. 23-34, 52 FR 1833, Jan. 15, 1987; 52 FR 34745, Sept. 14, 1987]

EFFECTIVE DATE NOTE: By Amdt. 23-62, 76 FR 75760, Dec. 2, 2011, § 23.1199 was amended by revising the introductory text, effective Jan. 31, 2012. For the convenience of the user, the revised text is set forth as follows: